Stormwater Monitoring

COMPLETE WATER MONITORING SOLUTIONS

xylem

Let's Solve Water

At Xylem, We Are Committed To Helping You Solve Your Stormwater Monitoring Site Challenges.

Our instruments are reliable

We provide a broad range of innovative equipment, capable of reliable measurements in extremely harsh conditions. Our application professionals take pride in designing, building, and servicing the high precision instruments and monitoring systems that help you collect accurate water monitoring data.

Our technology saves you time

Our instruments provide the reliable data you need to act quickly, work efficiently and reduce costs. Real-time access and automated data hosting from your network of sites minimizes trips out to the field, and provides assurance that your sites are collecting quality data.

Our application professionals understand your challenges

Every environment is unique—which is why we custom design a system that is tailored to your site. Let our experienced integration teams design a monitoring solution that meets the needs of your specific project, and provide continuous support for years to come.

Together, we can solve water.

Contents

Our Analytical Brands

Xylem is built around the brands you know and trust—some of which have been providing reliable monitoring solutions to you for the last 65 years.

YSI manufactures water quality, water level, data logging, and telemetry instrumentation for sampling, profiling and continuous monitoring.

SonTek manufactures acoustic doppler instrumentation for water velocity measurement in oceans, rivers, lakes, canals, harbors, estuaries, and laboratories.

Websites / Blogs

- sontek.com
- xylemanalytics.com
- ysi.com/stormwater
- ysi.com/systems
- ysi.com/blog
- exowater.com

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Stormwater Monitoring

Stormwater plays a big part in surface water pollution. As stormwater runoff flows over surfaces, it can accumulate chemicals, debris, and other pollutants. Data from stormwater monitoring can be used to develop action plans to reduce the amount of polluted water that could be harmful to wildlife and communities.

Stormwater monitoring projects can be conducted for a variety of reasons such as Municipal Separate Storm Water Sewer System (MS4) compliance, Total maximum Daily Loads (TMDL), construction impact, and a variety of perimeter monitoring scenarios for contaminates such as heavy metals.

The unpredictability of storms can present challenges when it comes to collecting accurate, quality data. Trust our experienced application professionals to design a custom stormwater monitoring system, using Xylem brand sensors, that will provide continuous quality data in near real-time.
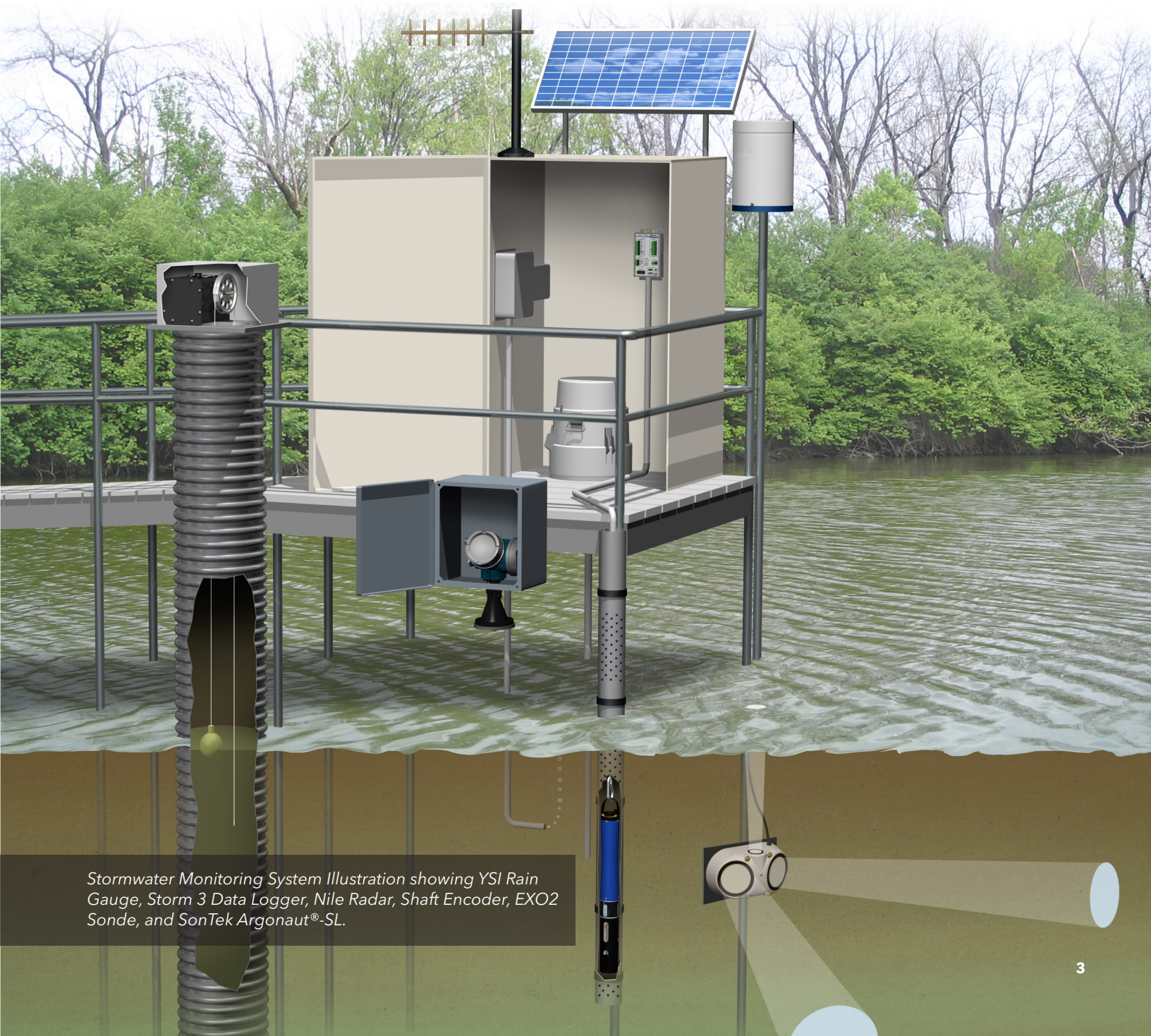
We will work in conjunction, providing a total solution to ensure you meet your budget without compromising the integrity of your data.

Portable aluminum chest monitoring system containing YSI Sonde and Data Logger.
Kansas City, Kansas

Stormwater monitoring sites encompass a broad range of parameters from simple rainfall and turbidity measurements, typically encountered during construction practices, to complex multiparameter sites including open channel flow, level, rainfall, pH, temperature, conductivity, dissolved oxygen, turbidity, and even nutrients.

Stormwater Monitoring System Illustration showing YSI Rain Gauge, Storm 3 Data Logger, Nile Radar, Shaft Encoder, EXO2 Sonde, and SonTek Argonaut®-SL.

System Examples

Portable fiberglass clamshell monitoring system containing SonTek-IQ®, YSI Sonde, Rain Gauge, Portable water sampler, Customer Data Logger, and Solar Panel. Havelock, North Carolina

Our versatile stormwater monitoring systems provide an advanced way to measure parameters such as water level, quality, and velocity in real-time. These systems are custom designed to fit your site specifications, meet almost any compliance criteria, and protect the public. Trust our sensors to provide the reliable data you need to act quickly, work efficiently and reduce costs.

- Components include: level, precipitation, water quality, velocity and flow sensors, and automated samplers.
- Deliver real-time data via cellular or radio modems to individual computers or customized private or public web sites.

Designed for easy lifting, **portable aluminum chests** provide a secure monitoring option for deployment at multiple sites. This system provides housing for a data logger, solar panel, battery, charging regulator and cellular modem.

- Vandal-resistant, flexible conduit provides sensor connection to the box.
- Automated sampler mounted externally with locking system.
- Aluminum chest or fiberglass clamshell box allow site flexibility.

Portable aluminum chest monitoring system containing YSI Sonde and Data Logger. Kansas City, Kansas

Permanent stormwater monitoring systems such as mast-mounted, metal walk-in sheds or constructed walkways and platforms, offer a secure option for long-term monitoring. The marine-grade, mast-mounted system pictured below is an example of a custom designed system, and includes the following instruments:
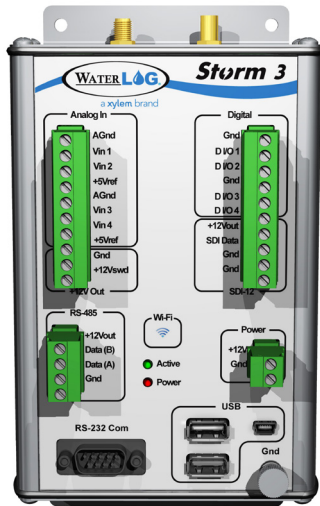
1. YSI Nile Radar Sensor and Enclosure
2. Nema4X Enclosure
3. Custom Radar Mounting Bracket
4. Solar Panel, Solar Regulator, and bracket
5. YSI Storm 3 Data Logger with Storm Central cloud data hosting service

Permanent Mast-mounted Stormwater Monitoring System Hardee County, Florida

System Design

YSI Storm 3 Data Logger

Stormwater monitoring sites may appear completely different during significant storm events than under normal conditions or during the initial field site selection and evaluation process. Our complete, real-time monitoring solutions offer early warning before, during, and after episodic storm and flood events.

Each system is designed around our innovative **Storm 3 data logger** and includes a NEMA-4X rated Storm 3 Turn Key enclosure. Designed with Wi-Fi connection, the Storm 3 allows easy configuration and data collection using the browser-based graphical user interface (GUI), with all standard web browsers on PCs, Tablets, and smart phones.

Real-time data collection will provide you with the versatility and access needed for proper data quality assurance and vital event trigger execution when required.

Stormwater monitoring site containing SonTek-SL, YSI Shaft Encoder, Level Sensor, Sonde, Portable Water Sampler, Rain Gauge, Data Logger, and Solar Panel.
Kissimee, Florida

Stormwater monitoring site containing YSI Radar, Data Logger, and Solar Panel.
Greenville, South Carolina

Stormwater monitoring site containing SonTek-IQ®, YSI Sonde, Rain Gauge, Portable water sampler, Customer Data Logger, and Solar Panel.
Havelock, North Carolina

Select Xylem brand sensors from the following categories on the pick list below, to help us design a stormwater monitoring system that meets the unique monitoring and data delivery needs of your specific project. The most important consideration when exploring any stormwater monitoring project is proper site and sensor selection.

Our systems also have the ability to integrate third-party sensors as required, to provide a complete monitoring solution for your site.

Contact your local sales representative or visit ysi.com/stormwater for detailed sensor specifications, accessory options, and more.

WATER LEVEL

Nile Radar (502/504/517)	Designed for mounting on bridges and platforms directly over the water, the **YSI Nile Radar** offers a non-contact water monitoring solution in a light weight, compact instrument. Its reliable interface and simple SDI-12 communication ensure seamless integration with current water monitoring stations. With three models to choose from, the Nile Series is sure to meet your water monitoring needs. • Accuracy range of ±3 mm • Advanced mapping options ysi.com/nile
Amazon Bubbler	The **YSI Amazon Bubbler** is a smart gas purge system built with communication and ease of setup in mind. The Amazon Bubbler Systems rugged design was developed for hydrologists and water professionals to provide long-term accurate and repeatable readings. It can be used as a stand-alone unit or sensor with a full suite of communication protocols including SDI-12, MODBUS via RS-485 or TCP, and 4-20mA. • Requires no special software • Easily configured with an optional display and/or web browser GUI ysi.com/amazon

System Design

Shaft Encoder (H-3301/11/42) 	Ideal for permanent monitoring sites, the **YSI Shaft Encoder**'s compact, sturdy design provides a solution that does not take up a lot of space. Monitoring the position of a float and pulley with a magnetic sensor, this instrument minimizes static sensitivity, allowing for high-accuracy data. • Built-in display with "Push to Read" button • Absolute, optical encoder preserves correct position—even if the power is lost ysi.com/shaft-encoder

PRECIPITATION

Tipping Bucket Rain Gauge (H-3401) 	Capable of maintaining accuracy at increased rates of rainfall ranging from 635 millimeters (0-25 inches) per hour, the **YSI Tipping Bucket Rain Gauge** has two removable stainless steel funnel screens and a rust-proof enclosure. It also has a magnetic reed bucket tip sensor and an internal leveling mechanism with a 'bulls-eye' level to ensure high accuracy data. • Bulit-in microprocessor automatically corrects errors • SDI-12 output ysi.com/rain-gauge

WATER QUALITY

EXO2 **Multiparameter Sonde** 	Suitable for long-term, continuous monitoring inland and coastal applications down to 250 meters (828 feet). With wet-mateable connectors, smart sensors, and an anti-fouling wiper, the **YSI EXO2**, 6-port water quality sonde exceeds others in the industry. • Welded titanium sensors, housings, and double o-rings • Flexible sensor payload/configurations ysi.com/exo2

VELOCITY AND FLOW

SonTek-SL 	Designed specifically for side mounting on bridges, canal walls, or riverbanks, the **SonTek SL**'s low-profile housing makes installation easy. With three models to choose from, the SonTek-SL can be used in channels as small as you can jump across to rivers as wide as the Amazon. • Lightweight and easy to transport and mount • Customizeable, flexible setup options to suit a variety of applications sontek.com/sontek-sl

Argonaut®-XR	Ideal for near shore deployments in less than 40 meters of water. Designed specifically for mounting on the bottom of a river, channel, or harbor, the **SonTek Argonaut®-XR** features a special mode that automatically adjusts one of its measurement cells for changing water level. Its small size, rugged build, and flexible system architecture make the XR attractive for both real-time operation and autonomous deployments. Measures non-directional waves too! • MultiCell feature - 10 water velocity cells plus an eleventh automatically adjusting cell • 3D water velocity sontek.com/argonaut-xr
SonTek-IQ® **(Standard/Plus/Pipe)**	Capable of working both in man-made as well as natural channels, the **SonTek-IQ** can collect flow (area-velocity) and volume data in as little as 8 cm (3 in) of water. It handles full or partially-full pipe conditions, slow, and even reversing flow with ease. Its five-beam pulsed Doppler design adapts to changing conditions and captures high-resolution data throughout the flow field. With the SonTek-IQ, expect to get quality data for quality decision making. • Self-calibrating water level using vertical acoustic beam and pressure • Proprietary flow algorithms for irrigation canals, natural streams and pipes sontek.com/IQ

COMMUNICATION

Storm Central	Data hosting through **Storm Central** allows data download from any computer or mobile device with an internet connection. Custom alarm notifications via SMS text and / or email let you know when a sample has been taken, and of other alarm criteria—such as a parameter exceeding a maximum limit. Pair with the Storm 3 data logger with optional internal, built-in cell modem for quality data collection. • Automated data push from data logger allows less frequent site visits • Data is secure and backed up off site ysi.com/storm-central

AUTOMATED SAMPLERS

Our systems are compatible with automated samplers for monitoring and compliance. Let our experienced integration teams help select a sampler that will fit the needs of your monitoring site.

Interested in designing a system? Contact YSI Information Systems and Services at +1.727.565.2201 or email systems@ysi.com to speak with an application professional.

Xylem |ˈzīləm|

1) The tissue in plants that brings water upward from the roots;
2) a leading global water technology company.

We're a global team unified in a common purpose: creating innovative
solutions to meet our world's water needs. Developing new technologies
that will improve the way water is used, conserved, and re-used in the
future is central to our work. We move, treat, analyze, and return water to
the environment, and we help people use water efficiently, in their homes,
buildings, factories and farms. In more than 150 countries, we have strong,
long-standing relationships with customers who know us for our powerful
combination of leading product brands and applications expertise, backed
by a legacy of innovation.

For more information on how Xylem can help you, go to www.xyleminc.com

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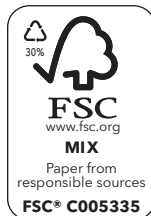Yellow Springs, Ohio 45387
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MIX
Paper from
responsible sources
FSC® C005335

ECO CALCULATIONS REPORT

YSI, Inc. saved the following resources by selecting U2:XG paper
with 30% post-consumer recovered fiber.

trees	energy	greenhouse gas	waste water	solid waste
5	1.9 million BTUs	1490 lbs CO2	2168 gal	138 lbs

U2:XG is FSC-certified, contains 30% post consumer recovered fiber, and is
manufactured with electricity in the form of renewable energy.
U2:XG is manufactured by Appleton Coated   www.appletoncoated.com